

E 13555-63 EWP(1)/EPP(c)/EWP(c)/EWT(m)/BDS AFFTC/ASD Fe-L/r-L RH/WW/JD
 ACCESSION NR: AP3000702 8/0190/63/005/005/0735/0735 68
 67

AUTHOR: Braginskaya, F. I.; El'piner, I. Ye.

TITLE: The action of ultrasonic waves on polyphosphates 41

SOURCE: Vy*sokomolekulyarny*ye soedineniya, v. 5, no. 5, 1963, 735-739

TOPIC TAGS: ultrasonic waves, polyphosphates, metachromatic dye, depolymerization

ABSTRACT: The purpose of the present investigation was finding out whether linear polymers reacted to treatment with ultrasonic waves differently from branched polymers, which had been the subject of earlier investigations by the junior author. The polymers chosen were metaphosphates of molecular weights 33,000 and 25,000 [Abstracter's note: erroneously called "polyphosphates"]. Their 0.5% aqueous solutions were saturated with oxygen, hydrogen, nitrogen, helium, or argon, and subjected to ultrasonic waves of 800 kilocycles frequency for a period of 5 hours. Substantial depolymerization, calculated from viscosity measurements, was observed in the solutions containing oxygen and hydrogen, a small one in the presence of helium, and an insignificant one with argon. In another set of experiments, based on the property of polymeric phosphates to give a metachromatic reaction with toluidine blue, it was established that ultrasonic waves caused the metachromatic peak to diminish, depending on the degree of depolymerization of the polymer, the

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L 13555-63

ACCESSION NR: AP3000702

phosphate-toluidine blue complex undergoing decomposition and the dye losing its color. Orig. art. has: 1 formula, 3 figures, and 2 tables.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR (Institute of Biological Physics, Academy of Sciences SSSR)

SUBMITTED: 10Nov61

DATE ACQ: 17Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 004

OTHER: 003

Card 2/2

BRAGINSKAYA, F.I.; EL'PINER I.Ye.

Complexes of protein molecules with polyanions and the effect
of ultrasonic waves on them. Biofizika 8 no.1:34-39 '63.

(MIRA 17:8)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

BRONSKAYA, L.M.; EL'PINER, I.Ye.

Polarographic studies of proteins subjected to the action of
ultrasonic waves. Biofizika 8 no.3:344-348 '63.

(MIRA 17:11)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

SOKOL'SKAYA, A.V.; EL'PINER, I.Ye.

Formation of fluorescent substances under the action of ultrasonic waves on cytosine. Akust. zhur. 9 no.1:126-128 '63. (MIRA 16:5)

1. Institut biofiziki AN SSSR, Moskva.
(Cytosine) (Ultrasonic waves) (Fluorescence)

EL'PINER, I.Ye.; STEKOL'NIKOV, L.I.

Structure and hormonal activity of insulin subjected to the action of ultrasonic waves. Biokhimiia 28 no.3:501-509 My-Je '63.

(MIRA 17:2)

1. Institute of Biological Physics, Academy of Sciences of the U.S.S.R., Moscow.

EL'PINER, I.Ye.; BRAGINSKAYA, F.I.

Effect of ultrasonic waves on the chemical conversions of
deoxyribonucleic acid. Dokl. AN SSSR 151 no.4:971-974 Ag
'63. (MIRA 16:8)

1. Institut biologicheskoy fiziki AN SSSR. Predstavleno akademikom
A.I.Oparinym.
(Nucleic acids) (Ultrasonic waves—Physiological effect)

EL'PINER, I.Ye.; SOKOL'SKAYA, A.V.

Physicochemical transformations of pyrimidine and purine bases in a field of ultrasonic waves with the formation of a series of fluorescent substances. Dokl. AN SSSR 153 no.1: 200-203 N '63. (MIRA 17:1)

1. Institut biologicheskoy fiziki AN SSSR. Predstavleno akademikom A.I. Oparinym.

EL'PINER, I.Ye.; STEKOL'NIKOV, L.I.

Effect of ultrasonic waves on the structure and hormonal
activity of the adrenocorticotrophic hormone. Dokl. AN SSSR
153 no.3:710-713 N '63. (MIRA 17:1)

1. Institut biologicheskoy fiziki AN SSSR. Predstavleno
akademikom A.I. Oparinym.

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EL'PINER, I. Ye.; SHEBALDINA, A. D.; BRAGINSKAYA, F. I.

"Vliyaniye ul'trazvukovykh voln na fotodinamicheskiy effekt i metakhromaticheskuyu reaktsiyu virusa tabachnoy mozaiki."

report presented at Symp on Virus Diseases, Moscow, 6-9 Oct 64.

Institut biofiziki ANSSSR, Moskva.

SISAKYAN, Norayr Martirosovich, akademik; SEVERIN, Sergey Yevgen'yevich; PARIN, Vasil'y Vasil'yevich; EL'PINER, Isaak Yefimovich, doktor biol. nauk; KUZIN, Aleksandr Mikhaylovich; ISAYEV, I.B.; SOROKO, Ya.I., red.

[Biology and its allies] Biologiya i ee soizuzmiki; sbornik. Moskva, Izd-vo "Znanie," 1964. 77 p. (Novoe v zhizni, nauke, tekhnike. VIII Seriya: Biologiya i meditsina, nos.17-18) (MIRA 17:10)

1. Deystvitel'nyy chlen AMN SSSR (for Severin, Parin). 2. Chlen-korrespondent AN SSSR (for Kuzin).

ACCESSION NR: AP4014692

s/0217/64/009/001/0040/0047

AUTHOR: Braginskaya, F. I.; El'piner, I. Ye.

TITLE: Metachromatic reactions of nucleic acids (DNA and RNA) exposed to ultrasonic waves

SOURCE: Biofizika, v. 9, no. 1, 1964, 40-47

TOPIC TAGS: DNA, RNA, ultrasonic exposure, oxygen medium, argon medium, metachromatic method, spectrophotometry, nucleic acid degradation, purine base, pyrimidine base, nitrogen base, toluidine blue interaction, polyphosphate, nucleic acid spiral structure

ABSTRACT: DNA and RNA solutions were exposed to ultrasonic frequencies of 800 kc in the presence of different gases for 2 to 6 hrs. Physical and physicochemical changes were determined by metachromatic reactions and spectrophotometry. Findings show that nucleic acids vibrated in the presence of oxygen or argon, but not in the presence of hydrogen, undergo degradation accompanied by breakdown of nitrogen bases. Purine bases compared to pyrimidine bases are more resistant to ultrasonic waves. With ultrasonic exposure of DNA in the presence

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ACCESSION NR: AF4014692

of argon, nitrogen base derivatives appear which are fluorescent in ultraviolet light. The different interactions of toluidine blue with DNA and RNA solutions vibrated in the presence of different gases are described. The authors "take pleasure in expressing their gratitude to L. A. Blumenfeld, Doctor of Chemical Sciences, for participating in discussions of the work and for valuable advice." Orig. art. has: 7 figures.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moscow
(Institute of Biological Physics AN SSSR)

SUBMITTED: 15Jun63

DATE ACQ: 27Feb64

KNOL: 00

SUB CODE: AM

NO REF SOV: 012

OTHER: 008

Card 2/2

KYABCHENKO, N.I.; BRAGINSKAYA, F.I.; EL'FINER, I.Ye.; TSEYTLIN, P.I.

Analysis of degradation mechanisms of DNA macromolecules by ultrasonic waves. Biofizika 9 no.2:162-167 '64. (MIRA 17:12)

1. Institut eksperimental'noy biologii AMN SSSR, Moskva i Institut biologicheskoy fiziki AN SSSR, Moskva.

ACCESSION NR: AP4038935

S/0217/64/009/003/0312/0314

AUTHOR: Borovyagin, V. L.; El'piner, I. Ye.

TITLE: The effect of ultrasonic waves on the submicroscopic structure of muscle tissue

SOURCE: Biofizika, v. 9, no. 3, 1964, 312-314

TOPIC TAGS: ultrasonic wave, ultrasound, mitochondrial submicroscopic structure, mitochondrion, sartorius, muscular tissue, ultrasonic effect, ultrasonic biological effect, mitochondrial membrane, sarcoplasmic nucleus, myofibril

ABSTRACT: The selective effect of ultrasound was studied in the submicroscopic structure of mitochondria of the isolated sartorius of the white mouse, under isometric conditions (isotonic with respect to the muscle), treated with ultrasound of 560 kc frequency and 10 watt/cm² at 4-6 C for 1, 5 or 10 minutes. The muscle was mounted on a frame. Preparation of the tissues is described. In the so treated muscle the interior mitochondrial membranes lost strict orientation and became detached from the outer membranes. This decomposition of interior structure increased with time; after 10 minutes the mitochondria were practically empty.

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ACCESSION NR: AP4038935

The content of the sarcoplasmic nucleus also lost its normal consistency and started to emulsify or form vacuoles, while the myofibrils remained practically unchanged. These data are important for studying the mechanism of functional, contractive and other disturbances of muscle tissue due to ultrasound. Orig. art. has: 1 figure.

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moscow (Institute of Biophysics, AN SSSR)

SUBMITTED: 14Dec61

ENCL: 00

SUB CODE: LS

NO REF SOV: 004

OTHER: 005

Card 2/2

I 11167-65 AEDC(a)/AFETR/AMD/ESD(t)
ACCESSION NR: AP4042479

S/0217/64/009/004/0503/0505

AUTHOR: Verevkina, I. V.; Gorkin, V. Z.; Mityushin, V. P.; Filipov, I. Ye.

TITLE: Effect of ultrasonic waves on monoaminoxidase bound to submicroscopic mitochondrion structures

SOURCE: Biofizika, v. 9, no. 4, 1964, 503-506

TOPIC TAGS: white rat, ultrasonic effect, liver mitochondrion, submicroscopic mitochondrion structure, monoaminoxidase activity, monoaminoxidase, piezoelectric generator, ultrasonic wave, microscope/ Spinko ultracentrifuge, UEM-100 etc from microscope

ABSTRACT: Mitochondrion suspensions prepared from white rat livers were exposed to ultrasonic waves to demonstrate that submicroscopic membrane structures containing monoaminoxidase pass from the vibrated liver mitochondrions into the surrounding medium. The suspensions were vibrated up to 60 min by a piezoelectric generator (600 kc frequency, 10 to 12 watt/cm² intensity) and then centrifuged with a

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ACCESSION NR: AP4042479

ToLP-1 condenser centrifuge ($t=10^\circ$) at 2,000 g (10 min) and 12,000 g (10 min). The mitochondrion sediment, partially free of ballast protein, was suspended in a 0.01 M phosphate buffer (pH 7.4). Concentration consisted of 3 to 4 mg dry mitochondrions/ml. Monoaminoxidase activity was determined by a spectrophotometric method using benzylamine as a substrate. Turbidity was measured with a FEKI-57 photoelectrocolorimeter. In additional investigations the mitochondrion suspensions were centrifuged at 105,000 g (1 hr) with a "Spinko" ultracentrifuge, and ultrathin mitochondrion sections were examined with a UEM-100 electron microscope. Findings show that the monoaminoxidase activity of mitochondrion suspensions exposed to ultrasonic waves does not differ from that of control mitochondrion suspensions. With centrifuging of vibrated suspensions at 12,000 g, monoaminoxidase activity was found mostly in the supernatant fluid. However, with ultracentrifuging of the same suspension at 105,000 g, monoaminoxidase was found in the sediment, that is, in a bound state with the submicroscopic structures. Electron microscope investigations show that the liver submicroscopic particles containing the monoaminoxidase enzyme are only 50 to 200 Angstroms. Orig. art. has: 4 figures.

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L 1467-65
ACCESSION NR: AP4042479

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moscow (Biological
Institute AN SSSR) Institut meditsinskoy fiziki AN SSSR

"APPROVED FOR RELEASE: Thursday, July 27, 2000

CIA-RDP86-00513R00041212

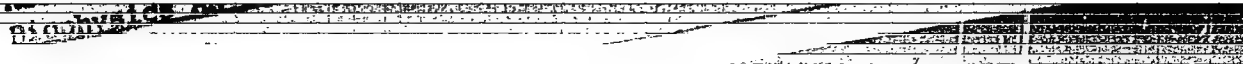
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APPROVED FOR RELEASE: Thursday, July 27, 2000

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ACCESSION NR: AP4035361

S/0221/64/057/002/0211/0231

AUTHOR: El'piner, I. Ye. (Moscow)

TITLE: Ultrasonics in molecular biophysics

SOURCE: Uspekhi sovremennoy biologii, v. 57, no. 2, 1964, 211-231

TOPIC TAGS: ultrasonic wave effect, molecular biophysics, ultrasonic biological action, protein synthesis, biomolecular structure, biocatalytic process, intracellular structure, cellular spatial distribution

ABSTRACT: The present study represents a systematization and generalization of recent experimental data on the biological action of ultrasonic waves. The material, based largely on data of the Ultrasonics Laboratory of the Biophysics Institute, is divided into: 1) ultrasonic wave synthesis of biologically important products, 2) effect of ultrasonic waves on the structure of biomolecules and biomacromolecules, 3) determining the topography of biocatalytic processes in animal, plant, and bacterial cells by ultrasonic waves, and 4) effect of ultrasonic waves on the spatial distribution of membrane

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ACCESSION NR: AP4035361

and intracellular submicroscopic structures in relation to cell vital activities. Most of the study is devoted to syntheses of various biological products, particularly proteins, in an ultrasonic field. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: LS

NR REF SOV: 048

OTHER: 054

Card

2/2

ACCESSION NR: AP4042802

8/0020/64/157/003/0729/0732

AUTHOR: El'piner, I. Ye.; Sutokskaya, I. V.; Oparin, A. I., Academician

TITLE: On the effect of ultrasonic waves upon the structure and antibiotic activity of gramicidin C

SOURCE: AN BSSR. Doklady*, v. 157, no. 3, 1964, 729-732

TOPIC TAGS: Gramicidin C, ultrasonic wave, ultrasound effect, chemical ultrasound effect, antibiotic activity, gramicidin structure, Bac. mycoides, Escherichia coli, aromatic aminoacid, aminoacid analysis, glyoxalic acid, deamination, peptide, argon, electrophoresis

ABSTRACT: This work was based on earlier studies on the ultrasonic effect upon structure and function of protein and polypeptide molecules with biocatalytic properties. Under the influence of ultrasound the gramicidin C molecules undergo a specific chemical transformation. This is accompanied by the appearance of organic matter in the solution, with bactericidal properties against Bac. mycoides and Escherichia coli, the microorganisms used for this study. The gramicidin molecule configuration is described. The product was used in 0.2, 0.3 and 0.5% diluted

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ACCESSION NR: AP4042802

ethanol solution. Ultrasonic waves were applied under air, oxygen or argon at 800 kilocycles and about 18 watt/cm² for 0.5 - 12 hours, after which the aminoacid composition was analyzed by chromatography, spectroscopy and electrophoresis. In the presence of argon or oxygen a strong smell developed. No significant decomposition of the aromatic aminoacids of the gramicidin molecule was observed by spectrophotometric or chromatographic methods. The electrophoretic test gave an additional spot with bromophenol blue. Glioxalic acid was also detected. It is assumed that side groups of peptides (leucine, ornithine) were detached, with desamination of the terminal NH₂ groups, and that the increased bactericidal activity was caused by a newly formed, as yet unidentified compound. This increased activity was not observed when ultrasound was applied in the presence of hydrogen. These findings point to a possible new source of biologically active compounds. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Institut biologicheskoy fiziki Akademii nauk SSSR (Institute of Biophysics, Academy of Sciences, SSSR)

SUBMITTED: 09Mar64

ENCL: 00

Card 2/3

"APPROVED FOR RELEASE: Thursday, July 27, 2000

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• STEKOL'NIKOV, L.I.; EL'PINER, I.Ye.

Physicochemical transformations and change in pharmacological properties
of purine derivatives (caffeine) under the action of ultrasonic waves.
Biofizika 10 no.2:232-235 '65. (MIRA 18:7)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

TITLE: Effect of ultrasonic waves on the structure and biological activity of the polypeptide type of antibiotics (polymyxin H)

Fizika, v. 10, no. 4, 1965, 580-584

Effect of ultrasonic waves on the structure and biological activity of the

EL'PINER, I.Ye.; SHEBALDINA, A.D.

Photodynamic action of some derivatives of heterocyclic and aromatic compounds forming under the effect of ultrasonic waves. Biofizika 10 no.4:609-613 '65. (MIRA 18:8)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

EL'PINER, I.Ye.; FAYKIN, I.M.; BASURMANOVA, O.K.

Intracellular microcurrents caused by ultrasonic waves. Biofizika
10 no.5:805-812 '65. (MIRA 18:10)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

FAYKIN, I.M.; EL'PINER, I. Ye.

Emulsification processes caused by microstreaming induced in an
ultrasonic field. Akust. zhur. 11 no. 12:26-327 '65.

(MIRA 18:4)

1. Institut biofiziki AN SSSR, Moskva.

ZORINA, O.M.; STEKOL'NIKOV, L.I.; YEFIMOV, D.D.; ~~EL'PINER, I.Ye.~~

Effect of ultrasonic waves on the structure and immunobiological
function of γ -globulin. Biokhimiia 30 no.4:844-852 J1-Ag '65.
(MIRA 18:8)

EL'PINER, I.Ye.; BRAGINSKAYA, F.I.

Physicochemical and catalytic characteristics of the complexes of
polyphosphate with proteins and RNA. Biokhimiia 30 no.5:1090 1097
S-0 '65. (MIRA 18:10)

1. Institut biologicheskoy fiziki AN SSSR, Moskva.

"APPROVED FOR RELEASE: Thursday, July 27, 2000

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EL'PINER, I.Ye., doktor biolog. nauk

Ultrasonics in molecular biology. Priroda 54 no.8:20-27 Ag '65.
(MIRA 18:8)

EL'PINER, I.Ye.; SHEBALDINA, A.D.; BRAGINSKAYA, F.I.

Photodynamic action of dyes on the tobacco mosaic virus subjected to the action of ultrasonic waves. Dokl. AN SSSR 163 no.1:242-245 J1 '65. (MIR 18:7)

1. Institut biologicheskoy fiziki AN SSSR. Submitted September 14, 1964.

ZORINA, O.M.; STEKOL'NIKOV, L.I.; EL'PINER, I.Ye.

Physicochemical characteristics and antigenic activity of
separate fragments of human γ -globulin obtained under the
effect of ultrasonic waves. Biofizika 10 no.6:961-965 '65.
(MIRA 19:1)

1. Institut biologicheskoy fiziki AN SSSR, Moskva. Submitted
February 22, 1965.

BRONSKAYA, L.M.; SMIRNOVA, S.A.; EL'PINER, I.Ye.

Polarography of histidine subjected to ultrasonic irradiation. Biofizika 10 no.6:974-978 '65.

(MIRA 19:1)

1, Institut biologicheskoy fiziki AN SSSR, Moskva.
Submitted March 9, 1965.

L 23925-66 ENT(1)/T JK
ACC NRI AP6011941

SOURCE CODE: UR/0217/65/010/004/0609/0613

AUTHOR: El'piner, I. Ye.; Shebaldina, A. D.

ORG: Institute of Biological Physics, AN SSSR, Moscow (Institut biologicheskoy fiziki AN SSSR)

TITLE: Photodynamic effect of certain derivatives of heterocyclic and aromatic compounds formed under the action of ultrasonic waves

SOURCE: Biofizika, v. 10, no. 4, 1965, 609-613

TOPIC TAGS: tryptophan, tyrosine, heterocyclic base compound, saccharomyces, absorption band, ultrasonic effect, luminescence

ABSTRACT: The photodynamic effects of heterocyclic compounds: nitrogen bases (cytosine), aromatic amino acids (tryptophan and tyrosine), and derivatives produced under the action of ultrasound waves, were studied. A solution of cytosine, sonicated in the presence of argon (but not of oxygen, hydrogen or helium), acquires the ability for greenish-yellow luminescence in the visible range (luminescence maximum 515 millimicrons) and exhibits a photodynamic effect (established with respect to yeast cells). Solutions of aromatic amino acids (tryptophan and tyrosine), sonicated in the presence of oxygen (but not argon), exhibited a photodynamic effect. The solutions acquired a reddish-yellow color after sonication in the presence of oxygen; the color was less pronounced after sonication in the presence of argon, and the solutions remained colorless if sonicated after preliminary saturation

UDC: 577.3

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L 23925-66

ACC NR: AP6011941

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with hydrogen. The nature of the chemical conversions induced by ultrasound waves depended to a considerable degree on the structure of the sonicated substances, as well as on the nature of the gas present during sonication. The pigment mycetin, produced during the vital activity of Actinomycetes of the violet group, exhibited a photodynamic effect with respect to cells of *Saccharomyces cerevisiae*. Three absorption bands in the ranges 610-585, 560-540 and 510-494 millimicrons, were observed in the spectrophotometric curve of an alcohol solution of mycetin. The authors thank O. I. Artamonova for providing the mycetin powder. Orig. art. has: 2 figures and 4 tables. [JPRS]

SUB CODE: 06, 20 / SUBM DATE: 07May64 / ORIG REF: 006

Card 2/2 BK

L 26724-66

ACC NR: AP6010648 SOURCE CODE: UR/0217/65/010/006/0961/0965

AUTHOR: Zorina, O. M.; Stekol'nikov, L. I.; El'piner, I. Ye.

ORG: Institute of Biologic Physics, AN SSSR, Moscow (Institut biologicheskoy fiziki AN SSSR)

TITLE: Physicochemical specific features and antigenic activity of certain fragments of human gamma globulin obtained under ultrasonic effect

SOURCE: Biofizika, v. 10, no. 6, 1965, 961-965

TOPIC TAGS: ultrasonic effect, gamma globulin, experiment animal, antigen, ~~physical and chemical techniques~~, protein, aminoacid, immunology

ABSTRACT: Data are presented to show that 4 protein fragments with antigenic activity can be isolated from ultrasound-treated gamma globulin solutions. Physicochemical properties of resistance to acid hydrolysis, electrophoretic properties, and N-terminal aminoacid residues were studied. A 1% water solution of gamma globulin was subjected to ultrasonic waves at 760 kilocycles for 4 hours under oxygen, then fractionated by column chromatography on DEAE cellulose with progressive elution and yielded 4 fractions determined by optio

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UDC: 577.3

L 26724-66

ACC NR: AP6010648

density. Fraction I contained 55% of the total protein, II and III 10.3% and 3% respectively. Acid hydrolysis with HCl at 100 C for 15 hours and subsequent paper chromatography yielded 5 stains for I while the other fractions gave only 2 stains. Analysis of the N-terminal aminoacids with dinitrofluorobenzene and paper chromatography gave cystine, aspartic acid, lysine and aspartic acid respectively for fractions I - IV. Electrophoretic studies showed highest fluorescence for the 3rd fraction, weakest for the first; maximal spectrophotometric absorption was at 280 millimicron for all fractions. The histidine content varied for the fractions, but was highest in the first. Immunogenic tests with rabbits for 4 weeks showed immunogenic effect for the first fraction identical to that of the total sound-treated globulin. "The authors wish to thank V. A. Kopylov for his help in mastering the method of column chromatography". Orig. art. has: 4 figures and 1 table.

SUB CODE: 06/ SUBM DATE: 22Feb65/ ORIG REF: 002/ OTH REF: 002

Card 2/2

L 27084-66 EWT(1) RO

ACC NR: AP6017428

SOURCE CODE: UR/0217/65/010/002/0232/0235

AUTHOR: Stekol'nikov, L. I.; El'piner, I. Ye. 33
B

ORG: Institute of Biological Physics, AN SSSR, Moscow (Institut biologicheskoy fiziki AN SSSR)

TITLE: Physical-chemical transformations and changes in the pharmacological characteristics of purine derivatives (caffeine) under the effect of ultrasonic waves

SOURCE: Biofizika, v. 10, no. 2, 1965, 232-235

TOPIC TAGS: UV absorption, ultrasonic irradiation, paper chromatography, gamma irradiation, alkaloid, pharmacology

ABSTRACT: It was established by A. V. Sokol'skaya and I. Ye. El'piner (Akusticheskiy Zhurnal 9, 126, 1963) that the chemical and physical properties of purine derivatives are altered by treatment with ultrasonic waves. Aqueous solutions of caffeine (0.5%, pH 6.0) were subjected to the action of ultrasound in the presence of O₂, Ar, and H₂. The ultraviolet absorption spectrum of caffeine changed considerably on irradiation of this alkaloid with ultrasound in the presence of O₂ and Ar, and showed differences depending on whether O₂ or Ar was used. During chromatography of caffeine subjected to the action of ultrasound for 4 hours in the presence of O₂, the paper chromatogram developed in ultraviolet light showed 4 spots, which correspond to Rf 0.85, 0.2, 0.46, and 0.78 respectively. The spot with Rf 0.85 was formed by unaltered caffeine; that with Rf 0.78 exhibited whitish-blue fluorescence on exposure to ultra-

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UDC: 577.3

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ACC NR: AP6017428

violet light. The chromatogram of caffeine treated with ultrasound in the presence of Ar was different: it consisted of the spot with Rf 0.65 and a long spot that exhibited whitish-blue fluorescence in ultraviolet light. Caffeine treated with ultrasound in the presence of H₂ showed no changes with respect to its ultraviolet absorption spectrum or chromatographic characteristics. Perfusion of the heart of a frog with an 0.5% caffeine solution diluted with a Ringer solution in a ratio of 1:2,000 stimulated contractions of the heart. Solutions of caffeine treated with ultrasound in the presence of H₂ or Ar had the same effect. On the other hand, perfusion with a caffeine solution treated with ultrasound in the presence of O₂ reduced the amplitude of the heart's contractions and slowed down their rhythm. Use of eluates of individual chromatographic fractions indicated that the paralyzing effect on the heart was associated with the Rf 0.46 fraction. Irradiation of caffeine solutions with gamma-rays in a dose of 760,000 r in the presence of H₂ or O₂ resulted in the development of an additional spot with Rf 0.195 on the chromatogram, while the chromatogram on irradiation in the presence of Ar remained unchanged. The pharmacological properties of caffeine were not altered by irradiation with gamma-rays.

Orig. art. has: 3 figures. [JPRS]

SUB CODE: 07, 06 / SUBM DATE: 29Apr63 / ORIG REF: 002

Card 2/2 6/

L 27592-66

ACC NR: AP6018404

SOURCE CODE: UR/0217/65/010/006/0974/0978

AUTHOR: Bronskaya, L. M.; Smirnova, S. A.; El'piner, I. Ye.

ORG: Institute of Biological Physics, AN SSSR, Moscow (Institut biologicheskoy fiziki AN SSSR)

TITLE: Polarography of histidine exposed to ultrasonic waves

SOURCE: Biofizika, v. 10, no. 6, 1965, 974-978

TOPIC TAGS: polarography, histidine, ultrasonic irradiation, catalysis, cobalt, ammonia, ammonium

ABSTRACT: The authors found that among the amino acids lacking in sulfur (lysine, serine, proline, valine, alpha-alanine, leucine, tyrosine, tryptophan, and alpha-phenyl-beta-alanine) that they investigated, only histidine was able to produce polarographic waves provided that the background used contained cobalt or nickel ions. Double polarographic waves with a half-wave potential of 1.56 and 1.82 v appeared in the presence of histidine in an ammonia-cobalt background. When the histidine concentration was increased, the waves became higher while the height of the polarographic wave caused by the reduction of cobalt ions on a mercury cathode decreased. The double polarographic histidine waves were found when the pH of the background used was alkaline, i. e., in the presence of ammonia and ammonium chloride with cobalt or nickel ions (pH 9.8)

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ACC NR: AP6018404

in the solution. Catalytic waves also appeared in a neutral or slightly alkaline medium. But only single catalytic polarographic waves arose in a neutral or acid medium.

A histidine solution (2.5 mg/ml) was exposed to ultrasonic waves with a frequency of 800 kc, intensity of 10 w/cm², duration 3-5 hours. An ammonia-cobalt solution was the background. Under these conditions catalytic waves did not appear. The height of the polarographic wave resulting from the reduction of cobalt ions on the mercury cathode rose considerably in the presence of the sonicated histidine. A similar phenomenon was observed when histidine was sonicated in the presence of O₂ or H₂. However, in these cases the catalytic waves did not completely disappear. Sonicated in the presence of O₂ or H₂, histidine produced a single wave that corresponded in half-wave potential to the first catalytic wave found during polarographic analysis of non-sonicated histidine. This wave was higher than that of the first catalytic wave of the non-sonicated amino acid. / Orig. art. has: 2 figures. [JPRS]

SUB CODE: 06, 07, 20 / SUBM DATE: 09Mar65 / ORIG REF: 007 / OTH REF: 003

Card 2/2

L 38903-66

ACC NR: AP6029704

SOURCE CODE: UR/0221/66/061/002/0212/0229

29
B

AUTHOR: El'piner, I. Ye. (Moscow)

ORG: none

TITLE: Advances in the biophysics of ultrasound waves 22

SOURCE: Uspekhi sovremennoy biologii, v. 61, no. 2, 1966, 212-229

TOPIC TAGS: ultrasonic effect, biophysics

ABSTRACT: Central to the biological action of high-intensity ultrasound waves are problems on the behavior of cavitation bubbles arising in sonated liquid. There are divergent views of the mechanism of action and the role of cavitation in the ultrasonic biological effect. The latter is expressed chiefly in the breakdown and disintegration of plant, animal, and bacterial cells, present in the suspended state in a sonated liquid. Reports have appeared to the effect that cavitation phenomena (formation of gas bubbles) occur also within cells, and this leads to their subsequent disintegration. A leaf of *Mnium affine* was subjected to sonation in a drop of water. The ultrasound frequency was 1 megacycle, the intensity, 6 watts/cm². Voids transparent to colored light formed in the cells of the leaves. These questions are of high interest because in the ultrasonic breakdown of cells their contents stream into the surrounding medium. For certain chemical compositions of this medium (including also the nature of the gaseous phase), biologically active substances and

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UDC: 577.44

L 38903-66

ACC NR: AP6029704

their complexes streaming from cells remain in the native state. As is known, the method of ultrasonic extraction of enzymes, vitamins, hormones, and medicinal substances from biological cells has already found widespread scientific-practical application. However, the action of ultrasound waves does not reduce only to the destruction and dispersion of biological structures; it has been observed that as a result of sonation, fine, often reversible biochemical and functional changes of live cells can take place. It is characteristic that functional changes of plant, animal, and bacterial cells are observed under such sonation conditions when the phenomena of cavitation are suppressed or do not arise at cavitation ultrasonics). These changes are expressed in the stimulation, or in contrast, the inhibition of various aspects of the vital activity of cells. Orig. art. has: 7 figures and 3 formulas. JPRS: 36,932

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 036 / OTH REF: 055

Card 2/2 *110*

L 38249-66 EWT(1)/T JK

ACC NR: AP6028673

SOURCE CODE: UR/0020/66/166/005/1221/1222

AUTHOR: Gol'din, M. I.; Faykin, I. M.; El'piner, I. Ye.

ORG: Institute of Biological Physics, AN SSSR (Institut biologicheskoy fiziki AN SSSR)

TITLE: Microflow induced by ultrasound waves in plant cells containing occlusions of tobacco mosaic virus

SOURCE: AN SSSR. Doklady, v. 166, no. 5, 1966, 1221-1222

TOPIC TAGS: biologic vibration effect, virus, ultrasound, cytology

ABSTRACT: Cells of the hair-like fibers of tobacco plants that contained occlusions of the tobacco mosaic virus were subjected to the action of ultrasonic vibrations by bringing within microscopic distance of single cells a point source of ultrasound waves (a needle with a point having a diameter of 0.1 mm). The amplitude of vibrations of the needle point was 1.0-2.0 microns. Microscopic observation of cells containing crystalline plates of the common tobacco mosaic virus showed that the virus crystal in the cell rotated and moved from one end of the cell to the other under the action of microflow currents induced in the cytoplasm by ultrasound. The crystal did not disintegrate, as it does when the cell wall is injured. Occluded crystal aggregates of the

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L 38249-66

ACC NR: AP6028673

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cyphomander strain of tobacco mosaic virus moved as a whole under the effect of ultrasound and did not disintegrate into component crystals. The long thread-like occlusions of the Kazakh strain of the virus were subjected to gyrations and winding motions, but also remained unaltered. Virus particles dissolve rapidly in cell juice: apparently they remained in the cytoplasm. One may assume that the crystal virus aggregates were organically bound to microscopic and submicroscopic cell structures and rotated together with them under the action of the flow induced by ultrasound. The vacuoles in the cytoplasm that were filled with cell juice also remained intact. This article was presented by Academician A. A. Imshenetiskiy on 6 April 1965. Orig. art. has: 1 figure. [JPRS: 36,932]

SUB CODE: 06 / SUBM DATE: 02Apr65 / ORIG REF: 002 / OTH REF: 002

Card 2/2

EL'PINER, I.A. (Moskva)

Ultra-acoustic characteristics of organs and tissues and their
importance in biology and medicine. Usp.sovr.biol. 42 no.2:143-
159 8-0 '56. (MIRA 9:11)
(ULTRASONIC WAVES--PHYSIOLOGICAL EFFECT)

KL'PINER, L.I., kand.med.nauk

In the world of ultrasonics. Zdorov'e 9 no.314-5 Mr '63. (MIRA 16:5)
(MOTION PICTURES IN SCIENCE)

БПОВ, Б.А., кандидат технических наук, редактор; ГРИШАЙЕНКО, М.И.,
редактор издательства; МАДРИНСКАЯ, А.А., технический редактор

[Short-delay blasting in mine work; a collection of papers delivered
at the conference on short-delay blasting] Korotkozamedlennoe
vzryvanie v gornom dele; sbornik trudov soveshchaniia po korotko-
zamedlennomu vzryvaniu. Pod obshchei red. B.A.Бова. Moskva, Ugle-
tekhizdat, 1956. 78 p. (MIRA 9:12)

1. Akademiya nauk SSSR. Institut gornogo dela. Mezhdovedomstvennaya
komissiya po vzryvnomu delu.
(Blasting)

1. Pov. B. A.

ANDROS, I.P., inzh.; ASSONOV, V.A., kand. tekhn. nauk.; BERNSTEIN, S.A., inzh.; BOKII, B.V., prof.; BROVMAN, Ya.V., inzh. BONDARENKO, A.P., inzh.; BUCHNIN, V.K., kand. tekhn. nauk; VERESKUNOV, G.P., kand. tekhn. nauk; VOLKOV, A.F., inzh.; GELESKUL, M.N., kand. tekhn. nauk; GORODNICHEN, V.M., inzh.; DEMENT'YEV, A.Ya., inzh.; DOKUCHAYEV, M.M., inzh.; DUBNOV, L.V., kand. tekhn. nauk; LEPIFANTSEV, Yu.K., kand. tekhn. nauk; YERASHKO, I.S., inzh.; ZHEKDANOV, S.A., kand. tekhn. nauk; ZIL'BERBROD, A.F., inzh.; ZINCHENKO, M.M., inzh.; ZORI, A.S., inzh.; KAPLAN, L.B., inzh.; KATSAUROV, I.N., dots.; KITATSKIY, B.Y., inzh.; KRAVTSOV, Ye.P., inzh.; KRIVOROG, S.A., inzh.; KRINITSKIY, L.M., kand. tekhn. nauk; LITVIN, A.Z., inzh.; MALEVICH, N.A., kand. tekhn. nauk; MAN'KOVSKIY, G.I., doktor tekhn. nauk; MATKOVSKIY, A.L., inzh.; MINDELI, M.O., kand. tekhn. nauk; NAZAROV, P.P., kand. tekhn. nauk; NASONOV, I.D., kand. tekhn. nauk; NEYENBURG, V.Ye., kand. tekhn. nauk; POKROVSKIY, G.I., prof., doktor tekhn. nauk; PROYAVKIN, M.T., kand. tekhn. nauk; ROZENBAUM, inzh.; ROSSI, B.D., kand. tekhn. nauk; SEMENSKIY, V.N., doktor tekhn. nauk; SKIRGELLO, O.B., inzh.; SUKHUT, A.A., inzh.; SUKHANOV, A.F., prof., doktor tekhn. nauk; TARANOV, P.Ya., kand. tekhn. nauk; TOKAROVSKIY, D.I., inzh.; THUPAK, H.G., prof., doktor tekhn. nauk; FEDOROV, S.A., prof., doktor tekhn. nauk; FEDYUKIN, V.A., inzh.; KHOKHLOVKIN, D.M., inzh.; KHRABROV, N.I., kand. tekhn. nauk; CHEKAROV, V.A., inzh.; CHERNAVKIN, N.N., inzh.; SHREYBER, B.P., kand. tekhn. nauk; KPOV, B.A., kand. tekhn. nauk; YAKUSHIN, N.P., kand. tekhn. nauk; YANCHUR, A.M., inzh.; YAKHONTOV, A.D., inzh.; POKROVSKIY, N.M., otvetstvennyy red.; KAPLON, Ya.G. [deceased], red.; MONIN, G.I., red.; SAVITSKIY, V.T.,

(Continued on next card)

ANDROS, I.P.---(continued) Card 2.

red.; SANOVICH, P.O., red.; VOLOVICH, M.Z., inzh., red.; GORITSKIY,
A.V., inzh., red.; POLUYANOV, V.A., inzh., red.; PADEYEV, E.I.,
inzh., red.; CHMOCHKOV, L.V., red. izd-va; PROZOROVSKAYA, V.L.,
tekhn. red.; NADZINSKAYA, A.A., tekhn. red.

[Mining; an encyclopaedic handbook] Gornoe delo; entsiklopedicheski
spravochnik, Glav. red. A.M. Terpigorev. Moskva, Gos. nauchno-
tekhnicheskoe izd-vo lit-ry po ugol'noi promyshl. Vol. 4 [Mining
and timbering] Provedenie i kreplenie gornykh vyrabotok. Red-
kollegiya glava: N.M. Pokrovskii... 1958. 464 p. (MIRA 11:7)

(Mine timbering) (Mining engineering)

IVOLGIN, Aleksandr Ivanovich, polkovnik v otstavke; ИПОВ, Борис Александрович, inzh.-polkovnik zapasa, laureat Stalinskoy premii; РОССАЛ, Н.А., polkovnik, red.; VOLKOVA, V.Ye., tekhn.red.

[Mine-laying and mine-field clearance] Minirovaniye i razminirovaniye. Moskva, Voen.isd-vo M-vs obor.SSSR, 1960. 93 p.
(MIRA 14:1)

(Mines, Military)

MORIN, Aleksey Il'ich; ROSSAL, N.A., polkovnik, red.; EPOV, B.A.,
dots., kand. tekhn. nauk, red.; SOKOLOVA, G.P., tekhn. red.

[Aid for the demolition man] V pomoshch' podryvniku. Pod
red. B.A.Epova. Moskva, Voenizdat, 1962. 54 p.

(MIRA 15:10)

(Demolition, Military)

EFOV, Boris Aleksandrovich; STARINOV, Il'ya Grigor'yevich;
BADANIN, B.V., red.; BOSSAL, N.A., polkovnik, red.;
SOKOLOVA, G.F., tekhn. red.

[Mines behind enemy lines] Miny v tylu vraga. Moskva,
Voenisdat, 1963. 103 p. (MIRA 16:4)
(Mines, Military)

EPOV, B.A., dots.; TSIKHON, N.P., inzh.

[Blasting; a textbook] Vzryvnoe delo; uchebnoe posobie.
Moskva, Mosk. in-t inzhenerov zhel-dor. transp., 1964. 196 p.
(MIRA 18:12)

EPOV, F.I.

~~SECRET~~
We celebrate our holiday joyfully. Mast. ugl. 5 no.8:
3 Ag '56.

(MLRA 9:11)

1. Brigadir prokhodchikov Lipovetskogo shakhtoupravleniya
kombinata Primorskugol'.
(Coal mines and mining)

МРОВ, Г. (г. Павло-Посад, Московск. обл.)

Machinery day. Prof.-tekh.obr. 12 no.12:27 D '55. (MIRA 9:3)

1. Pomoshchnik direktora po kul'turno-vospitatel'noy rabote
uchilishcha mekhanizatsii sel'skogo khozyaystva No. 17.
(Technical education)

EPov, G.

27-11-29/31

AUTHOR: Epov, G., Deputy Director for the Cultural-Pedagogical Work
of Mechanization School # 60, Moscow Oblast'

TITLE: Help to the Siberians (Pomoshch' sibiryakam)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, 1957, # 11,
inner page of rear cover (USSR)

ABSTRACT: A warm welcome was given to 350 boys and girls of the Moscow
Oblast' and the Tartar ASSR by the grain sovkhos in Pavlov-
skaya, Krasnoyarskiy Kray. The short note states that among
those arriving were many students from agricultural mechanizat-
ion schools. All of them performed satisfactory work.

AVAILABLE: Library of Congress

Card 1/1

BABIN, Pavel Nikolayevich, kand.tekhn.nauk; ZUBAKOV, Sergey Mikhaylovich, kand.tekhn.nauk; AVNER'YANOV, Veniamin Aleksandrovich, inzh.; VASHCHENKO, Fedor Il'ich, starshiy master; KUNAYEV, Vyacheslav Gavrilovich; EPOV, Georgiy Agafonovich, inzh.; BYCHKOV, Fedor Nikolayevich; DANIL'CHENKO, Mikhail Pavlovich; GOTS, Stepan Nikolayevich; ZHUKOVA, N.D., red.; ALFEROVA, P.F., tekhn.red.

[Work practices of the Kazakh Steel Mill] Iz opyta raboty Kazakhskogo metallurgicheskogo zavoda. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR, 1960. 112 p. (MIRA 13:12)

1. TSentral'naya laboratoriya Kazakhskogo metallurgicheskogo zavoda (for Kunayev). 2. Nachal'nik martenovskogo tsakha Kazakhskogo metallurgicheskogo zavoda (for Epov). 3. Inzhenerno-tekhnicheskiye rabotniki prokatnogo tsakha Kazakhskogo metallurgicheskogo zavoda (for Bychkov, Danil'chenko, Gots).
(Kazakhstan--Steel industry)

ANOKHINA, A.I., inzh.; ANOKHIN, A.M., inzh.; EPOV, G.A., inzh.

Making and pouring 25GS and 35GS steels into small ingots.
Stal' 23 no. 3:225-226 Mr '64. (MIRA 17:5)

1. Kazakhskiy metallurgicheskiy zavod.

EPOV, I.

Heroes of the day. IU.nat. no.6:18-19 Ja '60. (MIRA 13:8)

1. Direktor Zeyaskoy stantsii yunykhn naturalistov, Amurskaya
oblast'.

(Currants)

COUNTRY : USSR
CATEGORY : Cultivated Plants. Fruit. Berry. Nuciferous. M
Tea.
ABS. JOUR. : RZhBiol., No. 3, 1959, No. 11096
AUTHOR : Epov, I. S.
INST. :
TITLE : Local Apple Tree as a Stock for Rennets.
ORIG. PUB. : Sad i ogorod, 1958, No. 6, 73.
ABSTRACT : Upon grafting Rennet variety in the crown of local apple trees in Zeya Rayon of Amur Oblast' they were not affected by sun scalds and frosts.

CARD: 1/1

~~KPOV, I.8.~~

Young naturalist work in the orchard. Biol.v shkole no.2:57-58
Mr-Apr '60. (MIRA 13:8)

1. Direktor stantsii yunykhn naturalistov g. Zeya Amurskoy oblasti.
(Zeya (Amur Province)--Fruit culture--Study and teaching)

EPOV, V.S., inzh.; BELEN'KIY, D.M., dotsent; SAFRONOV, A.G., inzh.

Investigating the intermediate drive of the KIP-350 apron conveyor.
Izv. vys. ucheb. zav.; gor. zhur. 7 no.10:113-118 '64. (MIRA 18:1)

1. Sverdlovskiy gornyy institut imeni V.V. Vakhrusheva (for Epov).
 2. Institut Karagandagiprougelgormash (for Belen'kiy, Safronov).
- Rekomendovana kafedroy gornyykh mashyn i rudnichnogo transporta
Sverdlovskogo gornogo instituta.

EPCVA, A.A.

Treatment of obliterative endarteritis and atherosclerosis of the
vessels of the lower extremities by subcutaneous injection of oxygen.
Voen.-med.zhur. no.9:70-71 '64. (MIRA 18:5)

ЕРОВА, I.E.

Role of the thyroid gland in the regulation of cell division.
[with summary in English] Biul. eksp. biol. i med. 43 no.2:80-84
(MLRA 10:5)
P '57

1. Iz kafedry gistologii (zaveduyushchiy-dotsent I.A. Alov)
Khabarovskogo meditsinskogo instituta. Predstavlena deystvitel'ny
chlenom AMN SSSR D.N. Masonovym.

(THYROID GLAND, physiology,
cell division regulation) (Rus)

(CELL DIVISION,
regulation by thyroid gland) (Rus)

EPOVA, I. E.

Cand Biol Sci - (diss) "Role of the thyroid gland in the control of the mitotic activity of cells." Saratov, 1961. 12 pp; (Saratov Order of Labor Red Banner State Univ imeni N. G. Chernyshevskiy); 150 copies; price not given; (KL, 6-61 sup, 210)

EPOVA, N. A.		PROCESSIES AND PROPERTIES INDEX	
<div style="position: absolute; top: 10px; left: 10px; font-size: 2em; font-weight: bold;">CT</div> <div style="position: absolute; top: 10px; right: 10px; font-size: 2em; font-weight: bold;">110</div> <div style="position: absolute; top: 150px; left: 150px;"> <p>Dynamics of alkaloïds in <i>Thermopsis lanceola</i> N. G. Mel-Meluzova and N. A. Puzova. <i>Izvestiya Akademii Nauk SSSR, Geol. i. Gorn. Nauch. Ser.</i> No. 4, 138 (1960) (in English). (1960). — This plant is widely distributed in S. S. S. R., particularly in Krasnoyarsk and Irkutsk regions. It was recently introduced in the Soviet pharmacopoeia as a substitute of <i>Ipsecantha</i>. Tabulated data obtained in a preliminary study show the content of alkaloïds to average 1.60% in the leaves of the plant, 1.60% in the stems and leaves, 1.0% in the lower parts of the stem, 0.60% in the roots, 0.26% in the fruit skin and 1.17% for the seed. In the part of the plant above the soil, the content of alkaloïds ranges between 0.80 and 2.62%, the higher figure being observed in young sprouts at the beginning of the summer and the lower toward the end of September. In prairie and sandy localities, the alkaloïd content is 1.2%. On saline soil, it drops to 0.30%. Repeated analyses after one year showed a difference of only 0.05%. 10 references.</p> </div>			

EPP, N.Ya., inzh.

Impact strength of steel bolts at low temperatures. Khol.tekh.
40 no.2:51-52 Mr-Ap '63. (MIRA 16:4)
(Steel--Testing)

EPPEL', B.S. (Moskva); BOL'SEN, Ye.M. (Kiyev); LOPOVOK, L.M. (Khmel'nitskiy)

"Collection of trigonometric problems". A.I. and N.I. Khudobin. Reviewed by B.S.Eppel', E.M.Bol'sen, L.M.Lopovok. Mat. v shkole no.6: 77-81 E-D '55. (MLRA 9:2
(Trigonometry--Problems, exercises, etc.) (Khudobin, A.I.) (Khudobin, N.I.)

PPPL, B.S.(Moskva)

From the practice of teaching the slide rule in school. Mat.v
shkole no.6:59-67 H-D '57. (MIRA 10:11)
(Slide rule)

EPPEL', B.S.(Moscow)

Solving triangles by the slide rule. Mat. v shkole no. 4:55-61

Jl-Ag '58.

(MIRA 11:7)

(Triangle)

(Slide rule)

EPPEL', B.S. (Moskva)

Review of textbooks pertaining to the slide rule and
edited by the State Training and Pedagogical Literature
Publishing House. Mat. v shkole no.5:80-84 S-0 '59.

(MIRA 13:2)

(Slide rule--Textbooks)

OBRAZ, Konstantin Ivanovich; EPPEL', Boris Sergeyevich. Prinimal
uchastiye KOLDASHEV, A.M.; LEPESHKINA, N.I., red.; KORNEYEVA,
V.I., tekhn. red.

[The slide rule in secondary school; a textbook for teachers]
Logarifmicheskaya lineika v srednei shkole; posobie dlia
uchitelei. Moskva, Uchpedgiz, 1962. 126 p. (MIRA 16:1)
(Slide rule)

EPPEL', D.; CHEKHOV, I.

"University of culture" for builders. Stroitel' no.12:21
D '59. (MIRA 13:3)
(Leningrad--Adult education)

MEYERSON, G.A. (Moskva); DERGUNOVA, V.S. (Moskva); EPEL'BAUM, V.A.
(Moskva); GUREVICH, M.A. (Moskva)

Investigation of certain hard alloys in the system boron-
silicon-carbon. Izv. AN SSSR. Otd. tekhn. nauk. Met. i topl.
no. 4:90-94 J1-Ag '61. (MIRA 14:8)
(Boron-silicon alloys--Metallography)
(Power metallurgy)

CA EPPEL, F.A.

Analysis of hydrocarbon mixtures by the method of "tin points." M. M. Ketsikh, E. A. Ruzh, and I. F. Salnevich. *Zhur. Anal. Khim.* 9, 131-9 (1950).—The method is a further development of those of Dorfman and Hildebrand (*C.A.* 21, 1878) and Dice and Hildebrand (*C.A.* 23, 1331). The crit. temp. at which SnI₄ dissolves in a given hydrocarbon was detd. for n-heptane, 2,3-dimethylpentane, 2-methylhexane, 2,4-dimethylpentane, 2,2,3-trimethylbutane, 2,2-dimethylpentane, 2,2,3,4-tetra-, 2,2,3-, and 2,3,4-trimethylpentane. For each of the compds. there was a max. temp. corresponding to definite concn. of SnI₄. The max. temp. at which SnI₄ dissolved was detd. also for mixts. of these hydrocarbons taken in various proportions. The SnI₄ points of binary mixts., when the compn. in 0-100 wt. % is plotted vs. temp., gave straight lines. This method affords a means of detg. the compn. of mixts. of hydrocarbons, the phys. constants of which differ very little. M. Hosh

EPPEL, PA

USSR

Analysis of hydrocarbon mixtures by the lin point method.
M. M. Ketschov, P. A. Obolentsev, and I. P. Suknevich. *Trudy
Vsesoyuz. Nauch.-Issledovatel'sk. Inst. Khim. Pererabotki
Gazov (KHLIMGAS)* 6, 136-223 (1951).--The Pocharov and
Obolentsev method (C.A. 41, 2350g) is based on the data
of the crit. solu. temp. of Sol. of alkanes, cycloalkanes,
alkene, and aromatic hydrocarbons and their mixts. and
requires a knowledge of the Sol. points of the principal
components of alkylation, isomerization, and other petro-
leum-refining processes for use in the analyses of such prod-
ucts. Some 10 heptanes and isodetants were treated by
the Grignard method, and their purity was verified by
their b.p., sp. gr., and n. The difference in the lin point
of closely related hydrocarbons is

2

KETSLAKH, M.M.; RUDKOVSKIY, D.M.; EPPEL', F.A.

Preparation of trimethylolpropane by the condensation of butyralde-
hyde. Trudy VNIINol'tsekhim no.2:154-167 '60. (MIA 14:2)
(Butyraldehyde) (Formaldehyde)
(Propanediol)

KETSLAKH, M.M.; RUDKOVSKIY, D.M.; EPPEL', F.A.

Synthesis of dimethyldimethylolmethane by the condensation of isobutyraldehyde with formaldehyde. Trudy VNIINeftekhim no.2:168-177 '60.
(MIRA 14:2)

(Isobutyraldehyde) (Formaldehyde)
(Propanediol)

S/081/61/000/014/020/030
B117/B203

AUTHORS: Ketslakh, M. M., Rudovskiy, D. M., Eppel', F. A.

TITLE: Synthesis of methyl trimethylol methane by condensation of propionaldehyde with formaldehyde

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1961, 416, abstract 14/16. (Tr. Vses. n.-i. in-ta neftekhim. protsessov, no. 2, 1960, 125-153) ✓

TEXT: The authors studied the conditions of synthesis of methyl trimethylol methane (I) in a plant of periodic operation. They developed two processes for the separation of (I) by fractional distillation and extraction.
[Abstracter's note: Complete translation.]

Card 1/1

S/081/61/000/014/021/030
B117/B203

AUTHORS: Ketslakh, M. M., Rudkovskiy, D. M., Eppel', F. A.

TITLE: Production of polyatomic alcohols by condensation of
 C_3-C_4 aldehydes with formaldehyde in a continuous process

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1961, 416-417,
abstract (14 /18). (Tr. Vses. n.-i. in-t neftekhim.
protssessov, no. 2, 1960, 178-187)

TEXT: It was shown that methyl trimethylol methane (I), ethyl trimethylol methane (II), and dimethyl dimethylol methane (III) can be obtained by continuous condensation of C_3-C_4 aldehydes with CH_2O . The reaction is conducted in an aqueous solution at 20 - 80°C in the presence of the alkaline reagent. The contact time is 30 - 90 min. Excess CH_2O is removed by water at 115 - 130°C and 2 - 4 atm pressure, and led back into the process. 96-98% C_3-C_4 aldehydes, a 20-37% CH_2O solution, and a 20-25% NaOH so-

Card 1/2

S/081/61/000/014/021/030
B117/B203

Production of polyatomic...

lution are continuously introduced into a tubular reaction vessel within 10-30 min. The mixture is stirred at 30°C for 50-60 min, and then neutralized. Optimum conditions are: a) for production of (I): molar ratio $\text{CH}_2\text{O} : \text{CH}_3\text{CH}_2\text{CHO} = 3.5 : 1$, temperature 30-60°C, contact time 20 min; in the presence of NaOH or $\text{Ca}(\text{OH})_2$, the yield is 70% (if the molar ratio is increased up to 10, the yield rises to 77%); b) for production of (II): molar ratio $\text{CH}_2\text{O} : \text{CH}_3\text{CH}_2\text{CH}_2\text{CHO} = 10 : 1$, temperature 30-50°C, contact time 10 min. The use of NaOH should be preferred. The yield is 53-66%; c) for production of (III): molar ratio $\text{CH}_2\text{O} : \text{CH}_3\text{CH}(\text{CH}_3)\text{CHO} = 2.15 : 1$, temperature 60-80°C, contact time 5-15 min. In the presence of NaOH or $\text{Ca}(\text{OH})_2$, the yield is 80%. The technological scheme of the process is given. [Abstracter's note: Complete translation.]

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KETSLAKI, H.M.; RUDKOVSKIY, D.M.; ~~EPPEL~~¹, F.A.

Preparation of polyatomic alcohols by the continuous condensation
of $C_3 - C_6$ aldehydes with formaldehyde. Trudy VNIINeftekhim no.2:
178-187 '60. (MIRA 14:2)
(Alcohols) (Aldehydes) (Formaldehyde)

KETSLAKH, M.M.; RUDKOVSKIY, D.M.; EPPEL', F.A.

Preparation of polyatomic alcohols - trimethylolpentane and
trimethylolisobutane. Khim.prom. no.9:666-670 S '62. (MIRA 15:11)
(Alcohols)

SHTOKMAN, I.G., doktor tekhnicheskikh nauk; EPPEL', L.I., gornyy inzhener .

Testing traction chains on mine conveyers for fatigue. Vop.
rud. transp. no.3:22-28 1959. (MIRA 14:4)

1. Dnepropetrovskiy gornyy institut.
(Chains—Testing)
(Conveying machinery)

EPPEL', L.I. inzh.

Method of calculating the wear of mine conveyor chains. Vop.rud. transp.
no.4:34-42 '60. (MIRA 14:3)

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Some aspects of wear in forged link chains. Vop.rud. transp. no.4:43-49
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Cand Tech Sci - (diss) "Study of dynamic strength of traction belts of mine conveyors." Stalino, 1961. 18 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Donets Order of Labor Red Banner Polytechnic Inst); 150 copies; price not given; (KL, 5-61 sup, 196)

SHTOKMAN, I.G., doktor tekhn. nauk; EPPEL', L.I., inzh.;
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Testing haul chains of scraper conveyors with a programmed
changing of loads. Vop. rud. transp. no.5:47-58 '61.

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1. Donetskii politekhnicheskii institut (for Shtokman).
2. Dnepropetrovskiy gornyy institut (for Eppel', Gotovtsev).
(Conveying machinery—Testing)

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Effect of the grade of steel and the external environment on the
cyclical strength of forged sectional chains. Vop. rud. transp.
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1. Dnepropetrovskiy gornyy institut.
(Chains--Testing) (Mechanical wear)

SHTOKMAN, I.G., prof.; TIMOSHKIN, V.A., kand.tekhn.nauk; KRASILOVSKIY, L.S.,
inzh.; IL'CHENKO, A.I., inzh.; BERLIN, M.Ya., inzh.; SMIRNOV, V.K.,
inzh.; EPPEL', L.I., inzh.; FILIPPOV, A.M., inzh.

New two-member sectional TsDR traction chain for underground
scraper conveyers.. Ugol' Ukr. 6 no.2:33-34 F '62. (MIRA 15:2)
(Conveying machinery)

SHTORMAN, Il'ya Grigor'yevich, prof.; EPPEL', Leonid Isaakovich;
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tekhn. nauk, retsenzent; FROLOVA, Ye.I., red.izd-va;
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[Operation of underground conveyers] Ekspluatatsiia podzem-
nykh konveierov. Moskva, Gosgortekhnizdat, 1963. 202 p.
(MIRA 16:12)

(Mine haulage)

EPPEL', S. A.

USSR/Medicine - Dysentery

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"Modifiability of Bacteria and Diagnosis of Infections; Non-Typical Dysentery Microbes, F. T. Grinbaum, N. I. Khranova, S. A. Eppe'l', Ye. Yu. Kazhdan, Gor'kiy Sci-Res Inst of Vaccines and Sera; Kanavinsk Rayon San-Epidemiol Sta

ZHUR Mikro Epid i Immun, No 12, pp 11-14

A non-typical dysentery strain (I) which fermented carbohydrates with formation of acid and gas and could be agglutinated by Flexner bacilli serum was isolated from a convalescent. Passage through mice converted I into typical Flexner bacilli. The antiserum agglutinating I also agglutinated non-typical cultures isolated from other convalescents.

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